



ILLUSTRATIONS.

Animal power, Hawes'..... 332
Anti-spraying device, Pinckard's..... 34
Astronomical lantern, Clarke's..... 37
Attaching knobs to screws, Thar-
ton..... 314
Automatic toy, Goodwin's..... 66
Awl, eye-pointed, Bradford's..... 623

Band saw machine, First & Pryl-
liff's..... 163
Bell lighter, Stansberry's..... 179
Blotter, ruler, and paper cutter,
Hall's..... 391
Boiler feed, Cope & Maxwell's..... 278
Boring and mortising machine,
O'Neal's..... 408
Boring machine, McBeth & Co.'s..... 18
Brick machine, Taylor's..... 18
Burning coal dust, Crampton's..... 230

Carbrake, Foster's..... 70
Carburized hydrogen,
dale's..... 3
Carriage hub, O'Connor's..... 399
Car spring, Potts'..... 178
Carving machine, Knapp's..... 146
Cast-iron pulleys, Neuma's..... 146
Casting pulleys, Totten's..... 146
Chimney cleaner, Donohue's..... 2
Clifton filter, Lamson's..... 3
Cleaning device for soil pipes,
Wright's..... 311
Closing ruptures in fire hose, Col-
lins..... 102
Combined tool, Wilkinson and
Boyle's..... 66
Combined tool, Boardman's..... 179
Corn extractor, Roseberry's..... 328
Corn husker, Phillips'..... 159
Cotton press, Boston's..... 81
Cut-off, variable, Watts & Phelps'..... 47

Diamond drilling machine, Sever-
ance & Holt's..... 319
Door guard, Gehwind's..... 50
Door stop, Farney & Donaldson's..... 214
Dovetailing machine, Evans'..... 102
Dovetailing machine, Knapp's..... 146
Drive well point, Edison's..... 10
Dumpling cart, Hand's..... 373
Dyeing hair, apparatus for, Mer-
ritt's..... 353

Ear tongs, Hellen's..... 211
Elastic car wheel, Humpal's..... 138
Elastic wheels, Pilkington's..... 332
Electro-magnetic improvements,
Palmer's..... 195
Excavator and dredging machine,
Sage and Alger's..... 271
Extending Club, Dibble's..... 114
Extension table, Leach's..... 136

Feed cutter, Garth's..... 406
Flank guide, Brown's..... 210
Flour mill, Mitchell & Kessinger's..... 337
Flower pot and tree tub, Bopier's..... 246
Infant dining chair, Smith & Co.'s..... 153
Frying machine, Quimby's..... 102
Friction clutch pulley, Allen's..... 380
Furnace gas, Hildreth's..... 333
Furrowing hammer, Sauer's..... 246

Gate, Brown's..... 70
Gate, Hoskins'..... 8
Glass pulleys, Bicknell's..... 239
Grate bar, Greenleaf's..... 150

Hand sewing machine, Collier's..... 134
Hemmer, extension, Bartlett &
Bosmer's..... 357
Hoisting machine, Mason & Com-
pany's..... 246
Horse block and hitching post,
Reed's..... 322
Horse power hayrack, Steele's..... 150
Hot air register, Young's..... 353

Ice shaving machine, Gilliland's..... 406
Impregnating wood with tar, Pas-
tuch's..... 173
Infant dining chair, Smith & Co.'s..... 153
Infant power washing machine,
Highberger's..... 146
Intrenching tool, Harrison's..... 81

Knitting machine, Bickford's..... 367

Labeling cans, machine for, Tyr-
rell's..... 208
Ladle for pouring metal, Benton's..... 330
Lithographic machine, Hughes &
Kimber's..... 15
Lubricating device, Hees's..... 54
Lubricator, Wickham's..... 54

Machine for turning axle trees,
Boyd's..... 303
Magnetic motor, Stevens & Man-
gum's..... 300
Malt kiln, Goodman's..... 300
Metallic rocking chair, Berg's..... 138
Metropolitan railway, Hannab's..... 308
Milk pail and strainer, Drake's..... 291

Neck yoke ring and slide, Best's..... 374

Oiling wool, machine for, Mayall's..... 3
Ore-washing machine, Platt's..... 110

Packing box, Merrihou's..... 363
Packing machine, Mattison's..... 227
Pipe wrench, Robbins'..... 325
Piston and packing, Clabback's..... 72
Piston packing, Smith's..... 162
Planing screw, Savage's..... 162
Pliers, Walker's..... 34
Pump and level, Johnson's..... 64
Portable engine, Smith & Wigg's..... 53
Post hole borer, Summers'..... 31
Punching block and saw, Schroy's..... 31
Pruning shears, Clinton & Harris'..... 30
Push cart, Schopp's..... 282
Pyrometer, Bulky's..... 100

Quartz crusher, Varney & Rix's..... 180
Quin, Dorris's..... 180

Railroad jack, Fox's..... 380
Recording steam gage, Edison's..... 380

Rectangular cheese, Holdredge's..... 6
Reinforce gun, Terrell's..... 191
Rifled guns, cast steel, Krupp's..... 234
Road locomotive and steam crane,
Arrell & Porter's..... 334
Rock tunneling machine, Henley's..... 334
Rotary oven, Wedges'..... 334
Running gear, Swartwout's..... 343

Salting meats, device for, Sadler's..... 282
Saw lock, Hovey's..... 336
Saw arbor, Heald's..... 336
Screw wrench, Burgess & Cline's..... 211
Scrubbing machine, Iron's..... 34
Section roller and marker, Evans'..... 52
Sewing machine cover, French's..... 84
Sewing machine, Rayer & Lin-
coln's..... 86
Shears for trimming brushes, Brom-
bacher's..... 258
Sheep shears, Mather's..... 226
Shoemaker's tool, Fishers'..... 51
Shot case, Boston's..... 22
Slide valve, Collier & Mac-
munn's..... 142
Sound indicator, Cochran's..... 95
Spoked wheel, Carlisle's..... 262
Spring bed bottom, Willard's..... 198
Spring aape for stairs, Adkin's..... 195
Steam boiler, Allen's..... 184
Steam boiler, Tyler's..... 371
Steam engine, stationary, Cooper
& Co.'s..... 307
Steam engine, Macy's..... 371
Steam road roller, Arrell & Por-
ter's..... 162
Steam valve, balanced, Seifers's..... 234
Steam water elevator, Houghton's..... 226
Stove leg, Chubbuck's..... 22

Thimble and needle threader, Hun-
ter's..... 335
Thread cutter, Henry's..... 374
Torpedo, Harvey's..... 336
Transplanting and sowing, imple-
ment for, Wright's..... 290
Treadle motion, Proctor's..... 307
Trunk and rocking chair, Nye's..... 182
Turbine water wheel, Capron's..... 310
Type setting and distributing ma-
chines, Brown's..... 223

Utilizing waste heat, Ellis's..... 70
Ventilator for mattresses, Barnes'..... 182

Washing shield, Stow's..... 31
Water gate, Walker & Co.'s..... 111
Water pipe, non-corroding, Stow's..... 31
Water pump, Humpal's..... 138
Weather board bracket, Mulhol-
lin's..... 118
Wheels for traction engines, Pil-
kington's..... 332
Wine cellars, substitute for, Hydes
Wright's..... 173
Writing and copying case, Busby's..... 173

MISCELLANY.

Figures preceded by a Star (*) refer
to illustrated articles.

Accumulation of wealth..... 364
Acid and alkali works at Titus-
ville..... 73
Add, carbolic..... 280
Action is man's salvation..... 283
Adhesive of gold leaf, to prevent
the..... 118
Adhesive for leather belts..... 170
Adjustable animal power..... 815
Adjustable scaffold bench..... 170
Adjustable seat..... 150
Adulteration of articles in general..... 160
Adulteration of petroleum..... 103
Adulteration of sirup..... 97
Aerial chimneys..... 128
Aerial temperature..... 332
Aerostatic chimneys..... 332
Agricultural items..... 115
Agricultural patents for 1870..... 115
Air holes in iron..... 240
Air in workshop..... 62
Air light..... 24
Air, supply of, to combustibles in
furnaces..... 128
Air we breathe, the..... 232
Alaska, climate and products of..... 152
Albumen, destructive action of..... 193
Alcoholic drinks, consumption of..... 35
Alcohol from coffee..... 406
Algae or sea mosses, food from..... 163
Alizarine, artificial..... 163
Alkali engine at American Insti-
tute..... 194
Alloy of lead and platinum..... 25
Alloys of copper, the..... 102
Amber varnish in chloroform..... 319
America, desert, the..... 15
American desert, the..... 15
American eclipse expedition, the..... 153
American gas wells..... 515
American Institute of Archi-
tects..... 243
American Institute of mining en-
gineers..... 185
American Institute, proposed fair
of the..... 21
American iron bridge..... 214
American mechanic, the..... 208
American newspapers..... 242
American supply of arms to
France..... 242
Ancient and tanned brimack-
ing..... 281
Ancient, remarkable cure of..... 281
Anglo-Atlantic telegraph cables..... 147
Animalcules in oysters..... 97
Animal power..... 332
Animal trap..... 329, 330, 331
Annealing steel..... 298
Annual assay of the coinage..... 209
Answers to correspondents, 9, 26,
27, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Archimedeon screw and centrifu-
gal pump..... 377
Architecture..... 277
Arctic exploration..... 321
Arctic telegraph, the..... 197
Are disease effluvia injurious to
health?..... 296
Artesian well at Denver, Cal..... 211
Artesian well in Louisiana..... 288
Artesian well in Philadelphia..... 281
Artesian well on Union Pacific
Railroad..... 374
Artificial jewelry..... 294
Artificial light..... 294
Artificial production of cobalt..... 161
Artificial stone, Roman and
Egyptian..... 297
Asphaltum for garden walks and
street pavements..... 143
Asymmetry, curious case of..... 153
Atlantic cables, the broken..... 59
Attaching hairspring collet to
watch..... 302
Attachment for sack weights..... 347
Babbling, the..... 106
Bacon..... 315
Bagatelle..... 305
Bag holder..... 307
Balanced sliding valves..... 367
Balance for shafting, etc..... 367
Baling press..... 154
Ballooning..... 307
Balloons postal service during the
war..... 307
Balloons propeller..... 307
Balloons as a means of Arctic re-
search..... 100
Balloons, new use for..... 254
Bamboo, new use for..... 254
Barn door hangings..... 267
Barometer without mercury..... 8
Barometer, new source for..... 267
Barrel rolling apparatus..... 267
Base ball..... 309
Bathometer and other instruments
for exploring the sea..... 106
Battery, a cheap galvanic..... 329
Battle of the fires..... 241
Beams and girders, how affected
by iron lamp-posts..... 329
Beaver, Sr., not dead..... 302
Bedbugs, to kill..... 373
Beds and upholstery..... 309
Beekeeping..... 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Camels in Washoe..... 66
Camera box..... 299
Campor..... 322
Canada, maritime power of..... 163
Canal navigation..... 279
Canal propulsion, new plan for..... 283
Canals, ancient and modern..... 380
Can and ventilating stopper..... 202
Cancelling stamps..... 217
Candle, unwholesome..... 194
Candle molding machine..... 234
Cannopos, the decree of..... 374
Carat, what is a..... 218
Caravans..... 369
Carbolic acid and deas..... 352
Carbonic acid..... 187
Carburetted hydrogen gas, Am-
buhl's apparatus for..... 374
Car coupling..... 10, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Combined plow and scraper..... 283
Combined sad and duffing iron..... 319
Combined sawing machine..... 234
Combined tool..... 347
Combined vise and anvil..... 365
Combined washer and wringer..... 250
Commerce of the world..... 328
Commissioner of Patents, Report
of..... 121
Compass plant..... 108
Composing machine..... 218
Composition for staining wood..... 218
Composition of meteors..... 297
Compound engines, C. E. Emery on..... 359
Compound for vapor generator..... 107
Compressed air in coal mining..... 308
Condensed milk, manufacture of..... 191
Conducting wires for military tel-
egraphs..... 191
Connection for the induction coil..... 377
Connecting rod..... 377
Constant battery..... 202
Construction of water-proof cel-
lars, etc..... 230
Consumption of sugar, coffee, and
tobacco..... 153
Contractors, the modern order of..... 336
Cooking, sewing and..... 83
Cooperative buttermaking..... 273
Cotton cultivation, the..... 300
Cotton gin..... 300
Cotton mills at Fall River..... 341
Cotton planter..... 173, 347
Cotton seed and guano drill..... 341
Cotton seed oil in England..... 349
Cotton seed planter..... 341
Cotton worm..... 230
Cough candy..... 409
Countersinking attachment to
boring instruments..... 170
Covering for melting pots..... 251
Cracked coverings..... 371
Cracking and gathering of var-
nishes..... 245
Crystals found in plants..... 194
Crystalline boiler..... 305
Culinary vessel..... 234, 400
Cultivation of rice..... 377
Cultivation of the fig..... 377
Cultivator, Smith's..... 10, 11
Cultivator, Smith's..... 10, 11
Cure for tobacco chewing..... 265
Curiosities of genius relating to
inventions..... 211
Curiosities of science..... 409
Currier's sticker..... 409
Cushions on legs of work benches..... 342
Cutter..... 15
Cutting fine threaded screws..... 350
Cutting glass by blowpipe flame..... 349
Cutting glass, easy method of..... 350
Cutting glass, easy method of..... 350
Cutting teeth of small wheels..... 314
Cutting tobacco..... 103
Cut-off attachment to slide valves..... 314
Cut-off attachment to slide valves..... 314
Cut-off, variable..... 47

Earth closet system, the..... 338, 373
Earthquake in China, tremendous..... 406
Earths and alkalis used in paper-
making..... 337
Eastern Virginia..... 324
East river bridge, blowing out of
the east caisson..... 403
East river bridge-report of the
chief engineer..... 406
Eclipse expeditions, the..... 88
Eclipse, Mr. Norman Lockyer on..... 144
Eclipse, the solar..... 200
Economizing fuel and preventing
smoke..... 356
Editorial summary..... 339
Eel trap for water pipes..... 231
Effect of hard and soft water on
the muscles..... 329
Effect of heat and cold on iron
and steel..... 167, 176, 228, 233, 308
Effects of modern traveling on
health and longevity..... 233
Effects of the bombardment of
Paris..... 265
Elastic and tensile strength of
wrought iron..... 329
Electrical and other experiments,
new..... 240
Electrical gaslight apparatus..... 230
Electrical shadows and images
produced by electricity..... 402
Electric batteries, liquid for..... 300
Electric car brake..... 300
Electricity from the living body..... 227
Electricity on the blood, effect of..... 299
Electric jacks..... 391
Electric light..... 391
Electric light in warfare..... 281
Electric coppering..... 316
Electric deposition of copper and
brass..... 119
Electro magnet..... 154
Electro magnetic motor, Paine's..... 407
Electro metallurgy..... 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500

Explosive oils and lamps..... 260
Explosive bridge..... 314
Explosive ladder..... 263
Extension pulley..... 363
Extension table..... 363
Extract of meat..... 401
Eyes, the, and how to take care of
them..... 64

Facts about copper..... 346
Facts about the sun..... 377
Facts and figures about the Mont
Cenis tunnel..... 85
Facts for the work history of
the honey bee..... 309
Facts relative to the Erie canal..... 337
Fallacies in building..... 326
Fall River, an idle day at..... 154
Family reading..... 190
Fan blast regulator..... 331
Fanning mill..... 11
Fasting and board on wagon
boxes..... 154
Faucet..... 171
Faucet for drawing beer, etc..... 123
Feed bags for horses..... 187
Feeder for sewing machines..... 257
Feed for nail machines..... 251
Feeding blast furnaces..... 295
Feed water heater..... 107
Felt, waterproof French..... 49
Female magnetism on the com-
pass, influence of..... 353
Fence, influence of..... 10, 170
Fence post..... 123
Fender and gear wheel..... 307
Fender, etc., to fire grate..... 288
Ferrule..... 275
Fiber for distinguishing vegetable
fibers..... 133
Fif h wheel for carriages..... 317
File for papers..... 107
Filing and setting machine..... 219
Filling the leaves of turbines..... 239
Filter for rain water cistern..... 40
Filtering water..... 40
Firearm..... 234
Fire back for fireplace..... 154
Fire corners..... 404
Fire escape..... 50, 84
Fire escape ladder..... 120
Fire extinguisher..... 301
Fire in Paris, precautions against..... 305
Fireplace fenders..... 299
Fireplace grate..... 299
Fire tongs..... 75
Firing of steam boilers..... 217
Fish net supporter..... 267
Five milliards of francs..... 249
Flavor of fruits, increasing the..... 321
Flax thrashing and separating ma-
chine..... 408
Flexible rod (diacolumine)..... 362
Flex cutting machine..... 347
Flower stand..... 234
Flues in boilers..... 314
Fluids through pipes, conveyance
of..... 71
Flying machine in San Francisco..... 101
Flying spiders..... 341
Fog signals..... 273
Fog signal..... 273
Folding settee..... 273
Food from algae, or sea mosses..... 163
Force pump..... 293
Foreign tribute to American me-
chanics..... 281
Forest trees in Iowa..... 345
Fortunes in scraps..... 117
Fossil forest in California..... 274
Fossil ivory in Alaska..... 281
Foundations for buildings..... 37
Fountain blacking brush..... 123
Fountain paint brush..... 75, 251
Franco-Prussian war..... 17, 38

Damper..... 319
Damper for dust flues..... 107
Dampers for furnaces..... 263
Dangerous dentistry..... 216
Dangerous oils versus dangerous
lamps..... 212
Dangerous saws, plan..... 121
Dangerous well water..... 230
Dangers of petroleum oils..... 151
Dangers to ocean cables..... 368
Daniell's battery, improved form..... 156
Days' work? how many hours
constitute a..... 401
Decisions at the Patent Office, re-
ferring to..... 137
Decisions by the Commissioner of
Patents..... 312, 313
Decolorizing sirups..... 123
Decomposition of white light..... 276
Deep mines..... 128
Deep sea currents..... 229
Deep sea sounding and water..... 245
Decks in locomotive boilers..... 49
Defense of Paris, the..... 49
Demerara, Kaitera waterfall in..... 339
Dental lathe..... 59
Dental preparation..... 307
Dentist's instrument stand..... 307
Dentition of babies, etc..... 206
Deodorizer, iron as..... 275
Descent of matter for low..... 259
Desk, folding..... 107
Detecting fraud, singular mode of..... 89
Detection of blood stains..... 181
Detection of substances by the
blow pipe..... 186
Determining the percentage of
water in steam..... 313
Device for opening and closing
window shades..... 367
Device for piercing and lining ear
lobes..... 234
Diamond drills..... 120
Dies for forming horse collar shafts..... 363
Dip razor in warm water..... 325
Direct action water wheel..... 299
Discovery and invention..... 84
Disinfectant..... 290
Disinfectants..... 290
Disinfecting compound..... 288
Diverting wheels of knitting ma-
chine..... 314
Doctoring..... 375
Dolomite, new use for..... 41
Domestic silk trade..... 115
Double churn catcher..... 304
Double cut fastener..... 304
Dovetailing machine..... 101, 214, 36
Downfall of Paris..... 109
Drawer..... 54
Drawing and excavating ma-
chine..... 408
Drilling glass..... 378, 408
Drum for forming horse collar shafts..... 363
Drop hammer lifter..... 43
Dry dock..... 202
Drying phosphates..... 351
Drying pot..... 235
Duluth to the ocean, from..... 228
Dumb bells..... 315
Dumpling cart..... 373
Dumpling cart..... 373
Durability of timber, is it affected
by the moon?..... 244
Dyeing Turkey red..... 219
Dyer's recipes..... 129, 140, 165, 183, 225
Dynamite in artesian wells, use of..... 322



ILLUSTRATIONS.

Animal power, Hawes'..... 332
Anti-spraying device, Pinckard's..... 34
Astronomical lantern, Clarke's..... 37
Attaching knobs to screws, Thar-
ton..... 314
Automatic toy, Goodwin's..... 66
Axi, eye-pointed, Bradford's..... 63

Band saw machine, First & Pryl-
liff's..... 163
Bell lighter, Stansberry's..... 179
Blotter, ruler, and paper cutter,
Hall's..... 391
Boiler feed, Cope & Maxwell's..... 378
Boring and mortising machine,
O'Neal's..... 408
Boring machine, McBeth & Co.'s..... 18
Brick machine, Taylor's..... 18
Burning oil dust, Crampton's..... 230

Carbrake, Foster's..... 70
Carburized hydrogen,
dale's..... 3
Carriage hub, O'Connor's..... 399
Car spring, Potts'..... 178
Carving machine, Knapp's..... 146
Cast-iron pulleys, Neuma's..... 146
Casting pulleys, Totten's..... 146
Chimney cleaner, Donohue's..... 2
Chimney flue, Lamson's..... 2
Cleaning device for soil pipes,
Wright's..... 311
Closing ruptures in fire hose, Col-
lins..... 102
Combined tool, Wilkinson and
Boyle's..... 66
Combined tool, Boardman's..... 179
Corn extractor, Roseberry's..... 328
Corn husker, Phillips'..... 159
Cotton press, Boston's..... 81
Cut-off, variable, Watts & Phelps'..... 47

Diamond drilling machine, Sever-
ance & Holt's..... 319
Door guard, Gschwind's..... 50
Door stop, Farney & Donaldson's..... 214
Dovetailing machine, Evans'..... 102
Dovetailing machine, Knapp's..... 146
Drive well point, Edison's..... 10
Dumpling cart, Hand's..... 378
Dyeing hair, apparatus for, Mer-
ritt's..... 353

Ear tongs, Hellen's..... 211
Elastic car wheel, Humpal's..... 138
Elastic wheels, Pilkington's..... 332
Electro-magnetic improvements,
Palmer's..... 195
Excavator and dredging machine,
Sage and Alger's..... 271
Extending Club, Dibble's..... 114
Extension table, Leach's..... 136

Feed cutter, Garth's..... 406
Flank guide, Brown's..... 210
Flour mill, Mitchell & Kessinger's..... 337
Flower pot and tree tub, Bopier's..... 246
Infant dining chair, Smith & Co.'s..... 183
Frying machine, Quimby's..... 102
Friction clutch pulley, Allen's..... 380
Furnace gas, Hildreth's..... 338
Furrowing hammer, Sauer's..... 246

Gate, Breese's..... 70
Gate, Hoskins'..... 8
Glass pulleys, Bicknell's..... 339
Grate bar, Greenleaf's..... 150

Hand sewing machine, Collier's..... 134
Hemmer, extension, Bartlett's..... 357
Hoisting machine, Mason & Com-
pany's..... 246
Horse block and hitching post,
Reed's..... 322
Horse power hayrack, Steele's..... 150
Hot air register, Young's..... 353

Ice shaving machine, Gilliland's..... 408
Impregnating wood with tar, Pas-
tuch's..... 179
Infant dining chair, Smith & Co.'s..... 183
Infant power washing machine,
Highberger's..... 146
Intrenching tool, Harrison's..... 81

Knitting machine, Bickford's..... 367

Labeling cans, machine for, Tyr-
rell's..... 208
Ladle for pouring metal, Benton's..... 330
Lithographic machine, Hughes &
Kimber's..... 15
Lubricating device, Heese's..... 54
Lubricator, Wickham's..... 54

Machine for turning axle trees,
Boyd's..... 308
Magnetic motor, Stevens & Hen-
derson's..... 300
Malt kiln, Goodman's..... 300
Metallic rocking chair, Berg's..... 138
Metropolitan railway, Hannab's..... 308
Milk pail and strainer, Drake's..... 291

Neck yoke ring and slide, Best's..... 374

Oiling wool, machine for, Mayall's..... 3
Ore-washing machine, Platt's..... 118

Packing box, Merrihou's..... 363
Packing machine, Mattison's..... 227
Pipe wrench, Robbins'..... 325
Piston and packing, Cabbuck's..... 72
Piston packing, Smith's..... 162
Planing screw, Savage's..... 162
Pliers, Walker's..... 34
Pump and level, Johnson's..... 64
Portable engine, Smith & Wigg's..... 53
Post hole borer, Summers'..... 31
Punching block and saw, Schroy's..... 31
Pruning shears, Clinton & Harris'..... 30
Push cart, Schopp's..... 282
Pyrometer, Bulky's..... 100

Quartz crusher, Varney & Hix's..... 180
Quin, Dorris's..... 180

Railroad jack, Fox's..... 380
Recording steam gage, Edison's..... 380

Rectangular cheese, Holdredge's..... 6
Reinforce gun, Terrell's..... 319
Rifled guns, cast steel, Krupp's..... 34
Road locomotive and steam crane,
Arrell & Porter's..... 334
Rock tunneling machine, Henley's..... 334
Rotary oven, Wedges'..... 334
Running gear, Swartwout's..... 349

Salting meats, device for, Sadler's..... 282
Saw lock, Hovey's..... 336
Saw arbor, Heald's..... 336
Screw wrench, Burress & Cline's..... 311
Scrubbing machine, Iron's..... 34
Section roller and marker, Evans'..... 34
Sewing machine cover, French's..... 82
Sewing machine, Rayer & Lin-
coln's..... 86
Shears for trimming brushes, Brom-
bacher's..... 258
Sheep shears, Mather's..... 258
Shoemaker's tool, Fishers'..... 51
Shot case, Boston's..... 52
Slide valve, Collier & Mac-
munn's..... 163
Sound indicator, Cochran's..... 96
Spoked wheel, Carlisle's..... 262
Spring bed bottom, Willard's..... 198
Spring aape for stairs, Adkin's..... 196
Steam boiler, Allen's..... 184
Steam boiler, Tyler's..... 371
Steam engine, stationary, Cooper
& Co.'s..... 307
Steam engine, Macey's..... 371
Steam road roller, Arrell & Por-
ter's..... 162
Steam valve, balanced, Seifers's..... 394
Steam water elevator, Houghton's..... 326
Stove leg, Chubbuck's..... 22

Thimble and needle threader, Hun-
ter's..... 335
Thread cutter, Henry's..... 374
Torpedo, Harvey's..... 336
Transplanting flowers, implement
for, Wright's..... 290
Treadle motion, Proctor's..... 307
Trunk and rocking chair, Nye's..... 182
Turbine water wheel, Capron's..... 310
Type setting and distributing ma-
chines, Brown's..... 223

Utilizing waste heat, Ellis's..... 79

Ventilator for mattresses, Barnes'..... 182

MISCELLANY.

Figures preceded by a Star (*) refer
to illustrated articles.

Accumulation of wealth..... 364
Acid and alkali works at Titus-
ville..... 73
Add, carbolic..... 280
Action is man's salvation..... 283
Adhesive of gold leaf, to prevent
the..... 118
Adhesive for leather belts..... 170
Adjustable animal power..... 875
Adjustable scaffold bench..... 170
Adjustable seat..... 150
Adulteration of articles in general..... 160
Adulteration of petroleum..... 108
Adulteration of sirup..... 97
Aerial chimneys..... 128
Aerial temperature..... 332
Aerostatic chimneys..... 332
Agricultural items..... 115
Agricultural patents for 1870..... 115
Air holes in leather..... 240
Air in workshop..... 62
Air light..... 24
Air, supply of, to combustibles in
furnaces..... 128
Air we breathe, the..... 262
Alaska, climate and products of..... 192
Albumen, destructive action of..... 192
Alcoholic drinks, consumption of..... 35
Alcohol from coffee..... 406
Algae or sea mosses, food from..... 406
Alizarine, artificial..... 163
Alkali engine at American Insti-
tute..... 184
Alloy of lead and platinum..... 25
Alloys of copper, the..... 108
Amber varnish in chloroform..... 319
America, desert, the..... 15
American desert, the..... 15
American eclipse expedition, the..... 113
American gas wells..... 514
American Institute of Archi-
tects..... 243
American Institute of mining en-
gineers..... 185
American Institute, proposed fair
of the..... 214
American iron mine..... 214
American mechanic, the..... 208
American newspapers..... 242
American supply of arms to
France..... 242
Ancient and tanned brimack-
ing..... 281
Ancient, remarkable cure of..... 281
Anglo-Atlantic telegraph cables..... 147
Animalcules in oysters..... 97
Animal power..... 332
Animal trap..... 332
Annealing steel..... 298
Annual assay of the coinage..... 209
Answers to correspondents, 9, 26,
27, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Archimedeon screw and centrifugal pump..... 377
Architecture..... 277
Arctic exploration..... 321
Arctic telegraph, the..... 197
Are disease effluvia injurious to health?..... 296
Artesian well at Denver, Cal..... 211
Artesian well in Louisiana..... 288
Artesian well in Philadelphia..... 288
Artesian well on Union Pacific Railroad..... 374
Artificial jewelry..... 294
Artificial iron..... 294
Artificial production of corals..... 161
Artificial stone, Roman and Egyptian..... 297
Asphaltum..... 299
Asphalting garden walks and street pavements..... 153
Asymmetry, curious case of..... 148
Atlantic cables, the broken..... 59
Attaching hairspring collet to watch..... 302
Attachment for sack weights..... 347
Attaching to oil well tubing..... 281
Auger..... 75
Auger, hollow..... 107
Auger, well..... 107
Automatic band cutter, etc..... 10
Automatic barrel filler..... 10
Automatic closing gate..... 250
Automatic saw..... 250
Average city dwelling house..... 130
Ayring frame for animals..... 251
Aymara Indians in Peru..... 340, 341

Babbitt's metal..... 106
Baby carriage..... 302
Baby tender..... 315
Bacon..... 315
Bagatelle..... 305
Bag holder..... 307
Balanced sliding valves..... 367
Balance for shafting, etc..... 42
Baling press..... 154
Ballooning..... 307
Balloons postal service during the war..... 307
Balloons for exploring the sea..... 100
Balloons as a means of Arctic re-
search..... 100
Balloons, new use for..... 254
Bamboo, new use for..... 254
Barn door hangings..... 267
Barometer without mercury..... 8
Barometer, new source for..... 262
Barrel rolling apparatus..... 309
Base ball..... 309
Bathometer and other instruments for exploring the sea..... 100
Battery, a cheap galvanic..... 329
Battle of the fires..... 244
Beams and girders, how affected by iron lamp-posts..... 329
Beaver, Sr., not dead..... 302
Bedbugs, to kill..... 378
Beds and upholstery..... 309
Beds, to clean..... 309
Beehive..... 91, 251
Beetings..... 30
Beet root sugar in California..... 21
Beet root sugar, new source for..... 262
Belgian rails..... 35
Bellaire, Ohio, prosperity of..... 215
Bell making in Birmingham..... 112
Bell, quartz crystal, the..... 42
Belts, to calculate the width of..... 91
Belt lighter..... 91
Bench vice..... 367
Benzene oil, the..... 130
Benzole acid, new source for..... 262
Benzole acid from coal tar and petro-
leum..... 266
Benzole, preparation of..... 312
Béard's new process..... 312
Bessemer process, W. M. Williams on the..... 181
Bin cover..... 107
Bird cage..... 107
Bird trade, the American..... 130
Birds' tails not for ornament only..... 244
Birds, the night of..... 244
Bisal hide of carbon..... 244
Bit brace..... 267
Bituminous coal trade in 1870..... 102
Black copper..... 114
Blackening, harness..... 309
Black ink..... 81
Blacking extraordinary..... 6
Blind register..... 309
Blind riveting machine..... 219
Blood, uses of..... 41
Blowpipe as an aid to the drill..... 311
Boat caper..... 311
Boat detecting apparatus..... 305
Bobbin winding machine..... 305
Body, is electricity produced from the living?..... 227
Boiler caper..... 112
Boiler explosion..... 112
Boiler furnace..... 230
Boilers, firing of steam..... 247
Boilers, testing, by steam..... 26
Boilers, testing, by steam..... 26
Boles, preventive for..... 408
Boles, to cure..... 394
Boles..... 394
Bole heading machine..... 409
Bonard, Louis..... 345
Book blacking..... 170
Borax..... 195
Boring cylindrical rings..... 35, 95, 96
Boring for oil..... 242, 262
Borax, new source for..... 262
Box of blacksmiths..... 324
Boxford, Connecticut..... 39
Boxwood..... 158
Boynton's lightning saw..... 108
Boys' new process..... 312
Brake for railroad cars..... 123, 267
Brass, a new..... 192
Brassey, anecdote of Thomas..... 161
Brass type of iron..... 283
Breaking of car axles..... 130
Breech-loading cannon..... 214
Breweries and their fittings..... 271
Brewers of New York, ancient..... 329
Brick lifting..... 215
Brickmaking challenge..... 322
Bridge at St. Louis..... 341
Brittleness in brass..... 341
Broad cast fertilizer distributor..... 305
Broad cast seed and cultivator..... 305
Broiler..... 282
Brother, extracts from the diary of the late..... 113
Brush, bathing..... 154
Brick and frame..... 305
Buenos Ayres, plague in..... 371
Building blocks..... 409
Buildings, heating..... 32
Burner for lamps..... 254
Burns and scalds..... 80
Burns, remedies for..... 80
Bursting of furnaces..... 318
Buttens, manufacture of..... 31

Camels in Washoe..... 66
Camera box..... 299
Campor..... 322
Canada, maritime power of..... 163
Canal navigation..... 279
Canal propulsion, new plan for..... 288
Candles, unwholesome..... 194
Candle molding machine..... 284
Cannopos, the decree of..... 374
Carat, what is a..... 218
Caravans..... 369
Carbolic acid and deas..... 352
Carbolic acid..... 187
Carburetted hydrogen gas, Am-
buhl's apparatus for..... 374
Car coupling..... 10, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Combined plow and scraper..... 288
Combined sad and fitting iron..... 319
Combined sawing machine..... 334
Combined tool..... 334
Combined vise and anvil..... 365
Combined washer and wringer..... 350
Commerce of the world..... 321
Commissioner of Patents, Report of..... 121
Compass plant..... 108
Composing machine..... 298
Composition for staining wood..... 218
Composition of meteors..... 297
Compound engines, C. E. Emery on..... 359
Compound for vapor generator..... 107
Compressed air in coal mining..... 308
Condensed milk, manufacture of..... 191
Conducting wires for military telegraphs..... 191
Connection for the induction coil..... 377
Connecting rod..... 377
Constant battery..... 322
Construction of cheese-making in the United States..... 300
Construction of waterproof cellars, etc..... 230
Consumption of sugar, coffee, and new..... 230
Contractors, the modern order of..... 336
Cooking, sewing and..... 83
Cooperative buttermaking..... 273
Cotton..... 300
Cotton gin..... 300
Cotton mills at Fall River..... 341
Cotton planter..... 179, 341
Cotton seed and guano drill..... 341
Cotton seed oil in England..... 349
Cotton seed planter..... 349
Cotton worm..... 230
Cough candy..... 409
Countersinking attachment to boring instruments..... 120
Covering for melting pots..... 251
Cracked coverings..... 371
Cracking and gathering of var-
nishes..... 245
Crystals found in plants..... 194
Crystalline boiler..... 305
Culinary vessel..... 234, 400
Cultivation of rice..... 377
Cultivation of the fig..... 377
Cultivator..... 10, 154, 234, 379
Cultivator, Smith's..... 10
Cultivator, Smith's..... 10
Cure for tobacco chewing..... 265
Curiosities of genius relating to inventions..... 211
Curiosities of genius relating to inventions..... 211
Currier's sticker..... 409
Cushions on legs of work benches..... 342
Cutter..... 13
Cutting fine threaded screws..... 350
Cutting glass by blowpipe flame..... 349
Cutting glass, easy method of..... 350
Cutting glass, easy method of..... 350
Cutting teeth of small wheels..... 314
Cutting tobacco..... 105
Cut-off attachment to slide valves..... 314
Cut-off attachment to slide valves..... 314
Cut-off, variable..... 47

Damper..... 319
Damper for dust flues..... 107
Dampers for furnaces..... 266
Dangerous dentistry..... 216
Dangerous oils versus dangerous lamps..... 212
Dangerous saws, pipes..... 171
Dangerous well water..... 280
Dangers of petroleum oils..... 151
Dangers to ocean cables..... 368
Daniell's battery, improved form..... 156
Days' work? how many hours constitute a..... 401
Decisions at the Patent Office, re..... 137
Decisions by the Commissioner of Patents..... 312, 318
Decolorizing sirups..... 125
Decomposition of white light..... 276
Deep mines..... 128
Deep sea currents..... 229
Deep sea sounding..... 245
Decks in locomotive boilers..... 49
Defense of Paris, the..... 49
Demerara, Kaitera waterfall in..... 339
Dental lathe..... 59
Dental preparation..... 367
Dentists' instrument stand..... 367
Dentition of babies, etc..... 206
Deodorizer, iron as a..... 275
Descent of matter for low..... 259
Desk, folding..... 107
Detecting fraud, singular mode of..... 80
Detection of blood stains..... 181
Detection of substances by the blowpipe..... 181
Determining the percentage of water in steam..... 313
Device for opening and closing window shades..... 367
Device for piercing and lining ear lobes..... 234
Diamond drills..... 129
Dies for forming horse collar shafts..... 325
Dip razor in warm water..... 325
Direct action water wheel..... 299
Discovery and invention..... 84
Disinfectants..... 290
Disinfecting compound..... 288
Diverting wheels of knitting machines..... 314
Doctoring..... 375
Dolomite, new use for..... 41
Domestic silk trade..... 315
Double churn catcher..... 367
Double cut fastener..... 367
Dovetailing machine..... 101, 214, 367
Downfall of Paris..... 109
Drawer..... 54
Dredging and excavating machine..... 408
Drilling glass..... 378
Drum for forming horse collar shafts..... 325
Drop hammer lifter..... 43
Dry dock..... 202
Drying phosphates..... 351
Dunlop to the ocean, from..... 228
Dumb bells..... 315
Dumpling cart..... 378
Dumpling cart..... 378
Durability of timber, is it affected by the moon?..... 244
Dyeing Turkey red..... 219
Dyer's recipes..... 199, 140, 165, 193
Dynamite in artesian wells, use of..... 322

Earth closet system, the..... 338, 372
Earthquake in China, tremendous..... 406
Earths and alkalis used in pottery..... 337
Eastern Virginia..... 324
East river bridge, blowing out of the east calson..... 403
East river bridge-report of the chief engineer..... 406
Eclipse expeditions, the..... 88
Eclipse, Mr. Norman Lockyer on..... 144
Eclipse, the solar..... 200
Economizing fuel and preventing smoke..... 356
Editorial summary..... 339
Eel trap for water pipes..... 231
Effect of hard and soft water on the muscles..... 329
Effect of heat and cold on iron and steel..... 167, 176, 228, 263, 308
Effects of modern traveling on health and longevity..... 232
Effects of the bombardment of Paris..... 265
Elastic and tensile strength of wrought iron..... 329
Electrical and other experiments, new..... 240
Electrical gaslight apparatus..... 230
Electrical shadows and images produced by electricity..... 402
Electric batteries, liquid for..... 300
Electric car brake..... 300
Electricity from the living body..... 227
Electricity on the blood, effect of..... 299
Electric jugs, etc..... 391
Electric light..... 391
Electric light in warfare..... 281
Electric coppering..... 316
Electric deposition of copper and brass..... 119
Electro magnet..... 154
Electro magnetic motor, Paine's..... 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Combined plow and scraper..... 288
Combined sad and fitting iron..... 319
Combined sawing machine..... 334
Combined tool..... 334
Combined vise and anvil..... 365
Combined washer and wringer..... 350
Commerce of the world..... 321
Commissioner of Patents, Report of..... 121
Compass plant..... 108
Composing machine..... 298
Composition for staining wood..... 218
Composition of meteors..... 297
Compound engines, C. E. Emery on..... 359
Compound for vapor generator..... 107
Compressed air in coal mining..... 308
Condensed milk, manufacture of..... 191
Conducting wires for military telegraphs..... 191
Connection for the induction coil..... 377
Connecting rod..... 377
Constant battery..... 322
Construction of cheese-making in the United States..... 300
Construction of waterproof cellars, etc..... 230
Consumption of sugar, coffee, and new..... 230
Contractors, the modern order of..... 336
Cooking, sewing and..... 83
Cooperative buttermaking..... 273
Cotton..... 300
Cotton gin..... 300
Cotton mills at Fall River..... 341
Cotton planter..... 179, 341
Cotton seed and guano drill..... 341
Cotton seed oil in England..... 349
Cotton seed planter..... 349
Cotton worm..... 230
Cough candy..... 409
Countersinking attachment to boring instruments..... 120
Covering for melting pots..... 251
Cracked coverings..... 371
Cracking and gathering of var-
nishes..... 245
Crystals found in plants..... 194
Crystalline boiler..... 305
Culinary vessel..... 234, 400
Cultivation of rice..... 377
Cultivation of the fig..... 377
Cultivator..... 10, 154, 234, 379
Cultivator, Smith's..... 10
Cultivator, Smith's..... 10
Cure for tobacco chewing..... 265
Curiosities of genius relating to inventions..... 211
Curiosities of genius relating to inventions..... 211
Currier's sticker..... 409
Cushions on legs of work benches..... 342
Cutter..... 13
Cutting fine threaded screws..... 350
Cutting glass by blowpipe flame..... 349
Cutting glass, easy method of..... 350
Cutting glass, easy method of..... 350
Cutting teeth of small wheels..... 314
Cutting tobacco..... 105
Cut-off attachment to slide valves..... 314
Cut-off attachment to slide valves..... 314
Cut-off, variable

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|-----|--------------------------------|-----|-----------------------------|-----|--------------------------------------|-----|--|------------------------------|-----|---------------------------|----|----------------------------|-----|----------------|----|-----------------|-----|---|-----|-----------------------------|-----|-----------------------------|-----|--------------------------|-----|------------------------|---------|-----------------------|-----|---------------------|----|---------------------------------|-----|----------------------------|----------|-------------------------------------|-----|---|-----|-------------------------------|----|---|-----|--------------------|-----|------------------------|----|-------------------------------|----|--------------------|----|------------|-----|-------------------|-----|---|-----|--------------------|-----|---------------------------------|-----|---------------------|-----|---------------------------------|-----|---------------------------------|-----|-------------------|----------|-------------------|-----|-------------------------------|-----|----------------------------|-----|----------------------------------|----|------------------------------|----|---------------------|-----|---------------------------------------|----|------------------|-----|-------------------------|-----|-----------------------------|----|-----------------------|-----|----------------------------------|-----|--|-----|-------------------------------|-----|--------------------------------|----|-----------------|----|----------------------------|-----|--------------------------|-----|----------------------------|-----|--|-----|-----------------|----|-------------------------|-----|-----------------------------|-----|------------------------------|-----|------------|----|--------------------------------------|-----|-----------------------|-----|--|-----------------------|-----|---------------------|-----|-----------------|-----|----------------------------|-----|-------------------------|-----|---------------------------|-----|---------------|-----|-----------------|-----|----------------|-----|---------------|-----|--------------------------|-----|------------------------|-----|-----------------------------|-----|------------------------|-----|-----------------------|-----|--------------------|-----|----------------------------|-----|------------------------|----------|------------------------------------|---|---|-----|----------------------------|----|--------------------|----|------------------------------|----|------------------------|-----|-------------------------|----|---|-----|--------------------|----|---|-----|------------------------|---------|--------------------------|-----|-----------------------------|-----|--------------------------|-----|-----------------------|-----|---------------------|-----|---------------------------|----|-----------------|-----|--------------------|----|------------------------------------|-----|---------------|-----|------------------------|----|-------------------|-----|-----------------------|-----|---------------------------------------|-----|--------------------|-----|----------------------|-----|--------------------------|-----|-------------------|-----|------------------------|-----|---------------------------|-----|---------------------------|-----|-----------------------------|----------|-------------------------------|-----|---------------------------|-----|-------------------------------------|-----|--------------------------------|----------|----------------------------|----|-------------------------------------|----------|-------------------------------|-----|--------------------------------|----|--------------------------|-----|-----------------------------|-----|---|----|---|----|--------------|-----|-------------------------|-----|---|-----|---|---------|--|-----|------------------------------------|-----|-----------------------|-----|---------------------------------|----|---------------------------|-----|-------------------------------|-----|---------------------------|-----|----------------------|----|-------------------------------------|----------|----------------------------|----------|--------------------------------------|---|-----------------------------------|-----|--------------------------|-----|----------------|-----|----------------------------------|-----|--------------------------|-----|---------------------|-----|-----------------------------------|-----|-------------------|-----|------------------------------------|-----|-----------------------------|-----|-------------------------|-----|------------------------------|-----|----------------------------|-----|-------------------------------------|-----|-----------------------------------|-----|---------------------------|-----|-------------------------------------|-----|---|-----|---|-----|-------------------------------|-----|-------------------------------------|-----|------------------------------|----|--------------------------------------|-----|-------------------------|-----|------------------------------|-----|-------------------------|-----|----------------------------|-----|--------------------------|-----|--|-----|--|-----|--|-----|--------------------------------------|-----|------------------------------------|-----|-------------------------------|-----|---------------------------------------|-----|---|-----|---|----|-----------------------|----------|------------------------------|-----|----------------------------------|--|
| French Atlantic cable, the..... | 323 | Illustrating trigonometry..... | 396 | Manufacture of needles..... | 327 | Package for oysters, clams, etc..... | 299 | Queries, 2, 3, 4, 7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000 | Galvanic battery, a new..... | 294 | Galvanized gray iron..... | 59 | Galvanized water pipe..... | 356 | Gang plow..... | 91 | Gas burner..... | 406 | Gas from the residuum of petroleum..... | 249 | Gas in London, testing..... | 323 | Gas pressure regulator..... | 331 | Gas well at Buffalo..... | 333 | Gas wells in Ohio..... | 66, 342 | Gate, Franklin's..... | 291 | Gate, Sibley's..... | 91 | Gear cutting on foot lathe..... | 302 | Gearing circular saws..... | 107, 123 | Gear wheels in a lathe, to cut..... | 320 | Gelatin from bones, etc., Rice's process..... | 355 | Geography of the sea bed..... | 49 | Geological museum at the School of Mines..... | 227 | Giant Turk, a..... | 103 | Gilding, out door..... | 90 | Glider rest for steamers..... | 20 | Glass cutting..... | 20 | Glove..... | 283 | Glue, use of..... | 117 | Glycerin in Cincinnati, manufacture of..... | 192 | Glycerin soap..... | 313 | Gold nuggets, formation of..... | 407 | Gold ornaments..... | 123 | Government Bureau of Mines..... | 151 | Governor for steam engines..... | 187 | Grafting wax..... | 235, 346 | Grain binder..... | 295 | Grain driver's separator..... | 171 | Grain hulling machine..... | 283 | Grain mill, to put in order..... | 30 | Grain or seed separator..... | 10 | Grain recorder..... | 171 | Grain separator and fanning mill..... | 10 | Grape sugar..... | 343 | Grate for furnaces..... | 107 | Gravel and sand heater..... | 59 | Gravel speech, a..... | 293 | Green glass for flower pots..... | 218 | Grist mill and cotton seed roller..... | 291 | Guess work and real work..... | 291 | Guide for sewing machines..... | 43 | Gun cotton..... | 22 | Gun maker's separator..... | 171 | Birmingham, England..... | 476 | Gunpowder experiments..... | 236 | Gunpowder in close chambers, firing..... | 297 | Hallstones..... | 79 | Hall storm in 1870..... | 122 | Hall storm, remarkable..... | 122 | Hall trade, the, curled..... | 119 | Hames..... | 59 | Hand turning and boring machine..... | 234 | Hardening talcum..... | 301 | Hartford Steam Boiler Inspection and Insurance Co., 34, 118, 177, 223, 297, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000 | Harvester binder..... | 295 | Harvester rake..... | 202 | Harvesters..... | 203 | Harvest, ice, in 1871..... | 161 | Hat making machine..... | 273 | Hay and cotton press..... | 188 | Hay fork..... | 219 | Hay loader..... | 251 | Hay press..... | 296 | Hay rake..... | 188 | Hay rake and loader..... | 188 | Health in old age..... | 312 | Healthy soil and water..... | 312 | Heating apparatus..... | 312 | Heating by water..... | 312 | Heating stove..... | 312 | Heliographic printing..... | 297 | Hell Gate obelisk..... | 296, 319 | Hematite, Professor Osborn on..... | 4 | Hemmer and binder for sewing machine..... | 303 | Hens lay, how to make..... | 17 | Hinge, double..... | 43 | Hinges for table leaves..... | 43 | Hinges, to select..... | 312 | Hints to mechanics..... | 71 | Historical and antiquarian collections in New York..... | 257 | Hitching post..... | 34 | Hog, scientific and theological aspects of the..... | 149 | Holding apparatus..... | 10, 284 | Honey, crystallized..... | 191 | Honey, preservation of..... | 191 | Honey, rose colored..... | 191 | Honey trade, the..... | 133 | Honeying trade..... | 133 | Hoop beaking machine..... | 10 | Hoop skirt..... | 154 | Huacac tunnel..... | 30 | Horse Greeley as a steam plow..... | 404 | Horsehoe..... | 394 | Horse collar pads..... | 27 | Horse collar..... | 283 | Horse detachable..... | 133 | Horse railways, Sir J. Whitworth..... | 133 | Horse bridges..... | 202 | Hot air furnace..... | 397 | Household implement..... | 277 | House plants..... | 277 | How eyes are made..... | 111 | How matches are made..... | 359 | How printing is made..... | 303 | How to build a chimney..... | 180, 232 | How to make a plumb rule..... | 260 | How to preserve eggs..... | 236 | How to prevent spring sickness..... | 236 | How to prove a plumb rule..... | 236, 356 | How we stand and walk..... | 16 | Hudson River Railroad disaster..... | 117, 123 | Human hair, imitation of..... | 161 | Human mind and human hand..... | 30 | Hum of insects, the..... | 230 | Hundred years ago, one..... | 144 | Huxley, Professor Thomas Henry, biographical sketch of..... | 71 | Huxley, Professor T. H., plan of education..... | 81 | Hydrant..... | 400 | Hydrate of chloral..... | 841 | Hydrate of chloral as a reducing agent..... | 361 | Hydrate of chloral, ill effects of..... | 89, 190 | Hydrate of chloral, new form for use of..... | 190 | Hydraulic apparatus for ships..... | 130 | Hydraulic engine..... | 331 | Hydraulic mining apparatus..... | 10 | Hydrocarbon oil lamp..... | 270 | Hydrocarbon vapor burner..... | 270 | Hydro-electric cable..... | 137 | Hydrogen, cheap..... | 59 | Hydrostatic galvanic gas light..... | 312, 356 | Hygrometer, the steam..... | 312, 356 | Hyposulphite of soda, tests for..... | 8 | Ice bridge in the East river..... | 136 | Ice harvest in 1871..... | 161 | Ice house..... | 161 | Ice machines, comparison of..... | 264 | Ice, manufacture of..... | 186 | Ice phenomenon..... | 147 | Ichthyosaurus or fish lizard..... | 233 | Igniting gas..... | 280 | Illinois and St. Louis bridge..... | 280 | Illustrating apparatus..... | 251 | Imitation of ebony..... | 314 | Imitation of human hair..... | 161 | Imitation of rosewood..... | 291 | Immigration, special report on..... | 245 | Improvement in lead furnaces..... | 309 | Improvement in plows..... | 118 | Improvement in preserving wood..... | 300 | Improvement in the manufacture of salt..... | 261 | Improvement of railways, suggestions for the..... | 246 | Impurities in white lead..... | 244 | Increasing the light of states..... | 352 | Incrustation of boilers..... | 97 | Indian mode of casting in metal..... | 225 | India rubber shoes..... | 154 | Industrious competition..... | 116 | Infringement trial..... | 345 | Ingenious contrivance..... | 388 | Ingrowing toe nails..... | 115 | Inspection of steam boilers in Ohio..... | 215 | Instruction in industrial drawing..... | 244 | Instruments in storm signal service..... | 245 | Insulating covering for boilers..... | 117 | Insulation of telegraph wires..... | 241 | Interesting coal history..... | 241 | Interesting experiments in color..... | 241 | Interior of the earth solid or fluid..... | 215 | International industrial competition..... | 72 | Invalid bedstead..... | 107, 363 | Invention, antiquity of..... | 107 | Inventions patented in 1870..... | 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207 |
|---------------------------------|-----|--------------------------------|-----|-----------------------------|-----|--------------------------------------|-----|--|------------------------------|-----|---------------------------|----|----------------------------|-----|----------------|----|-----------------|-----|---|-----|-----------------------------|-----|-----------------------------|-----|--------------------------|-----|------------------------|---------|-----------------------|-----|---------------------|----|---------------------------------|-----|----------------------------|----------|-------------------------------------|-----|---|-----|-------------------------------|----|---|-----|--------------------|-----|------------------------|----|-------------------------------|----|--------------------|----|------------|-----|-------------------|-----|---|-----|--------------------|-----|---------------------------------|-----|---------------------|-----|---------------------------------|-----|---------------------------------|-----|-------------------|----------|-------------------|-----|-------------------------------|-----|----------------------------|-----|----------------------------------|----|------------------------------|----|---------------------|-----|---------------------------------------|----|------------------|-----|-------------------------|-----|-----------------------------|----|-----------------------|-----|----------------------------------|-----|--|-----|-------------------------------|-----|--------------------------------|----|-----------------|----|----------------------------|-----|--------------------------|-----|----------------------------|-----|--|-----|-----------------|----|-------------------------|-----|-----------------------------|-----|------------------------------|-----|------------|----|--------------------------------------|-----|-----------------------|-----|--|-----------------------|-----|---------------------|-----|-----------------|-----|----------------------------|-----|-------------------------|-----|---------------------------|-----|---------------|-----|-----------------|-----|----------------|-----|---------------|-----|--------------------------|-----|------------------------|-----|-----------------------------|-----|------------------------|-----|-----------------------|-----|--------------------|-----|----------------------------|-----|------------------------|----------|------------------------------------|---|---|-----|----------------------------|----|--------------------|----|------------------------------|----|------------------------|-----|-------------------------|----|---|-----|--------------------|----|---|-----|------------------------|---------|--------------------------|-----|-----------------------------|-----|--------------------------|-----|-----------------------|-----|---------------------|-----|---------------------------|----|-----------------|-----|--------------------|----|------------------------------------|-----|---------------|-----|------------------------|----|-------------------|-----|-----------------------|-----|---------------------------------------|-----|--------------------|-----|----------------------|-----|--------------------------|-----|-------------------|-----|------------------------|-----|---------------------------|-----|---------------------------|-----|-----------------------------|----------|-------------------------------|-----|---------------------------|-----|-------------------------------------|-----|--------------------------------|----------|----------------------------|----|-------------------------------------|----------|-------------------------------|-----|--------------------------------|----|--------------------------|-----|-----------------------------|-----|---|----|---|----|--------------|-----|-------------------------|-----|---|-----|---|---------|--|-----|------------------------------------|-----|-----------------------|-----|---------------------------------|----|---------------------------|-----|-------------------------------|-----|---------------------------|-----|----------------------|----|-------------------------------------|----------|----------------------------|----------|--------------------------------------|---|-----------------------------------|-----|--------------------------|-----|----------------|-----|----------------------------------|-----|--------------------------|-----|---------------------|-----|-----------------------------------|-----|-------------------|-----|------------------------------------|-----|-----------------------------|-----|-------------------------|-----|------------------------------|-----|----------------------------|-----|-------------------------------------|-----|-----------------------------------|-----|---------------------------|-----|-------------------------------------|-----|---|-----|---|-----|-------------------------------|-----|-------------------------------------|-----|------------------------------|----|--------------------------------------|-----|-------------------------|-----|------------------------------|-----|-------------------------|-----|----------------------------|-----|--------------------------|-----|--|-----|--|-----|--|-----|--------------------------------------|-----|------------------------------------|-----|-------------------------------|-----|---------------------------------------|-----|---|-----|---|----|-----------------------|----------|------------------------------|-----|----------------------------------|--|

| | |
|---|-----|
| Trap, roach and bug..... | 107 |
| Tray holder..... | 91 |
| Treadle motion..... | 326 |
| Trees out of place..... | 345 |
| Tree surgery..... | 101 |
| Triangular suspension bridge..... | 242 |
| Trimming yare and thread..... | 202 |
| Triumphs of science, Dr. Doremus on the..... | 5 |
| Trouble and reward of inventors in England..... | 229 |
| Truss bridge..... | 123 |
| Tubes, heating surface of..... | 36 |
| Tubing the East river, N. Y..... | 254 |
| Tubular steam boiler..... | 251 |
| Tunnel at Detroit..... | 320 |
| Tunnel at Nesquehoning, Pa..... | 345 |
| Tunnel between Hecla and Etina..... | 281 |
| Tunnels, railway and canal, in England..... | 277 |
| Turbines..... | 316 |
| Turnbull's blue..... | 245 |
| Turning curved plunger..... | 314 |
| Turning plunger for cylindrical ring..... | 196 |
| Twenty-fourth of May, the..... | 276 |
| Type metal..... | 186 |
| Type setting machine..... | 351 |
| U | |
| Uncommon food..... | 269 |
| Underdrainage..... | 281 |
| Underground explorations..... | 253 |
| Underground grain for food..... | 312 |
| United States Signal Service..... | 48 |
| Unloading hay, apparatus for..... | 279 |
| Unpleasant discovery in the Patent Office..... | 125 |
| Unsafe oils again..... | 240 |
| Useful invention on shipboard, an..... | 285 |

| | |
|--|----------|
| Useful recipes..... | 244 |
| Useful suggestions, some..... | 324 |
| Use of silver in decorative art..... | 159 |
| Uses of dissociation..... | 345 |
| Uses of habit..... | 87 |
| V | |
| Vagaries of the Patent Office..... | 429 |
| Vaccination, origin of..... | 343 |
| Value of scientific knowledge to the clerk..... | 246 |
| Valve gear..... | 123 |
| Vapor generators for engines..... | 107 |
| Vaporizing hydrocarbons..... | 315 |
| Vapor lamp and vapor stoves..... | 251 |
| Varnish, shellac..... | 251 |
| Vegetable parchment, manufacture of..... | 226 |
| Vehicle..... | 10 |
| Ventilation of the Liverpool tunnel..... | 178 |
| Vesuvius during an eruption, a night on..... | 254 |
| Veteran inventor, the opinion of a vibration of thin glass tubes in cooling..... | 241 |
| Victoria Regia flowering in the open air..... | 10 |
| Vigils, prolonged..... | 401 |
| Vine and weed cutter..... | 27 |
| Vinegar apparatus..... | 10 |
| Vision of the year 1900..... | 20 |
| Vital electricity..... | 283 |
| Vocalises, by Anna Ballard..... | 4 |
| Voice from Texas on temperance..... | 308 |
| W | |
| Wagon axle..... | 385 |
| Wagon brake..... | 251, 315 |
| Wagon jack..... | 25 |

| | |
|--|---|
| Walking sticks, how made..... | 173 |
| Water printing press, the..... | 278 |
| Wanted, inventions..... | 161, 329 |
| Warehouse trucks..... | 8 |
| Warning and ventilating railroad cars..... | 120 |
| Warning country houses..... | 183 |
| Warning to inventors..... | 192 |
| Wash boiler..... | 120, 305 |
| Washing machine..... | 309, 107, 129, 134, 171, 234, 315, 351, 352 |
| Washing machine, improved..... | 140 |
| Waste liquor of paper mills..... | 34 |
| Water and wind wheel..... | 251 |
| Water, a remarkable body of..... | 55 |
| Water cooler..... | 91, 256 |
| Water cut-off..... | 120 |
| Watered stock, the effects of..... | 29 |
| Water elevator and carrier..... | 239 |
| Water filter..... | 10 |
| Watering streets with chemicals..... | 228 |
| Water meter..... | 409 |
| Water meter, a new..... | 249 |
| Water pipe protector, a novel..... | 126 |
| Water power on steam vessels..... | 225 |
| Water pressure engines for mines..... | 224 |
| Waterproof floors..... | 283 |
| Waterproofing..... | 324 |
| Water tight clothing..... | 231 |
| Water tight cotton cloth, to make..... | 260 |
| Water we drink, the..... | 249 |
| Water wheel, a small..... | 180 |
| Water wheels..... | 287 |
| Waterworks of Philadelphia..... | 243 |
| Wealth in our western veins..... | 335 |
| Weatherboard gage..... | 367 |
| Weather, effect of explosions on..... | 4 |
| Weaving, a wonder in..... | 340 |
| Weighing scale..... | 212 |
| Weights for experiments..... | 36 |

| | |
|--|---------------|
| Wells, moule for enlarging..... | 120 |
| West India, American improvements wanted in the..... | 404 |
| What a mechanic ought to know..... | 35 |
| What women want..... | 292 |
| Wheelbarrow frame..... | 43 |
| Wheel for vehicles..... | 171 |
| Wheels and axles for railroad cars..... | 125 |
| Whip rack..... | 283 |
| Whisky, new and old..... | 216 |
| Whitewash for outside walls..... | 403 |
| Wild pigeons..... | 343 |
| Williams' College scientific expedition..... | 261 |
| Williston university..... | 251 |
| Windmill..... | 251 |
| Window curtain fixture..... | 218 |
| Window regulator..... | 267 |
| Wood and ivory cases for..... | 251 |
| Wooden rail and fire escape..... | 218 |
| Wine basket..... | 287 |
| Wine press..... | 314 |
| Wire fences..... | 122 |
| Wire railway, the..... | 357 |
| Wire screen..... | 219 |
| Wisdom of the Egyptians..... | 58 |
| Wolfe Rock light house..... | 258 |
| Woman, this is of microscopes..... | 116 |
| Woman's view of the Patent Office..... | 96 |
| Wonders of the heavens..... | 245 |
| Wood and ivory cases for..... | 251 |
| Wood boring beetle..... | 367 |
| Wood carpeting..... | 200 |
| Wooden railroads..... | 212 |
| Wooden railways..... | 241, 250, 341 |
| Wood splitting..... | 107 |
| Woolen rags and shoddy..... | 38 |
| Worcester manufacturers..... | 440 |
| Workmen, inventions made by..... | 212 |
| Workmen's houses..... | 294 |

| | |
|---|----------|
| Worms in cotton plant, to destroy..... | 22 |
| Woven wire mattresses..... | 171 |
| Wreck of the <i>Sagamore</i> | 251 |
| Wrench, improved pipe..... | 32 |
| Wringer..... | 30 |
| Writing and copying case, portable..... | 175 |
| Writing surfaces, enamel on..... | 195 |
| Wyoming coal..... | 297, 372 |
| X | |
| Xylonite..... | 49 |
| Y | |
| Year and the day..... | 51 |
| Youthful telegraph operator..... | 261 |
| Z | |
| Zinc as a roofing material..... | 17 |
| Zinc ores, American..... | 66 |
| Zinc water tanks..... | 381 |

Official List of Patents.
ISSUED BY THE U. S. PATENT OFFICE
FOR THE WEEK ENDING JUNE 13, 1871.

| | |
|---|--------|
| SCHEDULE OF PATENT FEES: | |
| On each Caveat..... | \$10 |
| On each Trade-Mark..... | \$10 |
| On filing each application for a Patent, (seventeen years)..... | \$50 |
| On issuing each original Patent..... | \$10 |
| On appeal to Examiners-in-Chief..... | \$10 |
| On appeal to Commissioner of Patents..... | \$30 |
| On application for Extension of Patent..... | \$50 |
| On granting the Extension..... | \$50 |
| On filing a Disclaimer..... | \$10 |
| On an application for design (three and a half years)..... | \$10 |
| On an application for Design (seven years)..... | \$15 |
| On an application for Design (fourteen years)..... | \$30 |
| For Copy of Claim of any Patent issued within 30 years..... | \$1 |
| A sketch from the model or drawing, relating to such portion of a machine as the Claim covers, from upward, but available at the price above named..... | \$1 |
| The full specification of any patent issued since Nov. 30, 1866 at which time the Patent Office commenced printing them..... | \$1-25 |
| Official Copies of Drawings of any patent issued since 1836, the cost supply at a reasonable cost, the price depending upon the amount of labor involved and the number of times..... | |
| Full information, as to price of drawings, in each case, may be had by addressing..... | |
| MUNN & CO., Patent Solicitors, 37 Park Row, New York. | |

| | |
|--|--|
| 115,801.—RECOLDER.—J. T. Aldrich, New York city. | |
| 115,802.—STEAM CARRIAGE.—F. Alger, Boston, Mass. | |
| 115,803.—MILKING STOOL.—L. O. Allen, Gardiner, Me. | |
| 115,804.—REFRIGERATOR.—C. L. Anderson, A. Bogardus, Yonkers, N. Y. | |
| 115,805.—MEDICAL PREPARATION.—W. A. Aspinall, Brooklyn. | |
| 115,806.—LETTER.—G. G. Bailey, Putnam, Conn. | |
| 115,807.—BARRIL, ETC.—G. W. Banker, New York city. | |
| 115,808.—BOOT STRETCHER.—E. R. Bardin, Newburg, N. Y. | |
| 115,809.—STREAM TRAP.—A. G. Bearup, New York city. | |
| 115,810.—HOIST.—J. R. Benedict, Williamson, N. Y. | |
| 115,811.—STAVE DRESSING.—L. D. and L. C. Benson, North Jackson, Pa. | |
| 115,812.—PHOTOGRAPHIC BACKGROUND.—L. G. Bigelow, Grand Rapids, Mich. | |
| 115,813.—ELEVATOR.—J. Bishop, Austin, Texas. | |
| 115,814.—LOCK WHEEL.—E. W. Brettell, Elizabeth, N. J. | |
| 115,815.—MOP HEAD.—J. Brizee, Alvarado, Cal. | |
| 115,816.—VARNISH.—W. Brooks, South Canton, Mass. | |
| 115,817.—DISCHARGE APPARATUS.—W. J. Brundred, Oil City, Pa. | |
| 115,818.—CLUTCH.—W. C. Bureh, G. D. Oatley, Gloucester, N. J. | |
| 115,819.—CAR COUPLING.—E. Campbell, Medusa, N. Y. | |
| 115,820.—CUTTING FORMS.—J. W. Campbell, New York city. | |
| 115,821.—BIVETING TOOL.—B. F. Cobb, West Troy, N. Y. | |
| 115,822.—SASH HOLDER.—D. N. B. Coffin, Jr., Newton, Mass. | |
| 115,823.—FURNACE.—A. G. Cook, Burlington, Vt. | |
| 115,824.—WHEEL BORER.—B. F. Copp, West Cumberland, Me. | |
| 115,825.—SWING.—J. A. Crandall, Brooklyn, N. Y. | |
| 115,826.—CLEW.—G. H. Creed, New York city. | |
| 115,827.—GRATE.—S. P. Davis, Constantine, Mich. | |
| 115,828.—CLEANING HEMP, ETC.—C. A. Dean, Boston, Mass. | |
| 115,829.—CLOTHES DRYER.—J. K. Derby, Jamestown, N. Y. | |
| 115,830.—FENCE.—H. Deyoe, Machias, N. Y. | |
| 115,831.—STOVE.—N. Duncan, Beaver Falls, Pa. | |
| 115,832.—PANTALOON.—G. R. Eager, Boston, Mass. | |
| 115,833.—GRAIN DRYER.—T. W. Eaton, Kankakee, Ill. | |
| 115,834.—PRUNING SAW.—P. Eberle, Free town, Ind. | |
| 115,835.—WASHING MACHINE.—F. M. Ellis, Galva, Ill. | |
| 115,836.—BEDSTEAD.—C. F. Nahmmacher, Pittsburgh, Pa. | |
| 115,837.—PROJECTOR.—W. Farini, London, England. | |
| 115,838.—BOAT DETACHER.—H. E. Foster, Decatur, Ill. | |
| 115,839.—SCHOOL DESK.—J. H. French, Burlington, Vt. | |
| 115,840.—PIN CLAMP.—E. L. Gaylord, Terryville, Conn. | |
| 115,841.—FURNACE.—W. B. Geddes, Rochester, N. Y. | |
| 115,842.—CARRIAGE SEAT.—S. P. Graham, London, Canada. | |
| 115,843.—BEE HIVE.—D. M. Griffith, Alum Bank, Pa. | |
| 115,844.—MILLSTONE ELEVATOR.—J. B. Hall, Lebanon, N. H. | |
| 115,845.—CAR COUPLING.—J. B. Harper, St. John, Mo. | |
| 115,846.—INDICATOR.—A. R. Harris, St. Louis, Mo. | |
| 115,847.—INDICATOR.—A. R. Harris, St. Louis, Mo. | |
| 115,848.—SAWING MACHINE.—J. Harris, Grand Ledge, Mich. | |
| 115,849.—BEE HIVE.—H. Harvey, Meriden, Ill. | |
| 115,850.—BREW COOLER.—G. M. Hasinger, Vicksburg, Miss. | |
| 115,851.—STRAP HINGE.—C. F. Hawley, Kansas City, Mo. | |
| 115,852.—SPOUT.—D. Hayes, J. Marten, Cambridge, Mass. | |
| 115,853.—POLISHING HEELS.—C. H. Helms, Poughkeepsie, N. Y. | |
| 115,854.—ENGINE.—R. Henderson, Salem, Mass. | |
| 115,855.—HAIRPIN.—E. Hewitt, J. McAniff, New York city. | |
| 115,856.—EXERCISING CLUB.—C. E. Hiester, New York city. | |
| 115,857.—STRETCHER.—D. W. G. Humphrey, Chelsea, Mass. | |
| 115,858.—PISTON.—J. A. Huss, Bowling Green, Ky. | |
| 115,859.—FABRIC.—T. Isherwood, Westerly, R. I. | |
| 115,860.—SLEIGH KNEE, ETC.—G. L. and H. Ives, Detroit, Mich. | |
| 115,861.—POWER.—F. P. Jaquith, Hoonick Falls, N. Y. | |
| 115,862.—EGG BEATER.—H. F. Jenks, T. Marsh, Pawtucket, R. I. | |
| 115,863.—BED BOTTOM.—R. V. Jenks, W. A. Miller, Paterson, N. J. | |
| 115,864.—POWER.—C. L. Johnson, Omaha, Neb. | |
| 115,865.—HEATER AND DRYER.—H. R. Johnson, Detroit, Mich. | |
| 115,866.—CLOTHES DRYER.—John Johnson, Perry, Ill. | |
| 115,867.—WASHING MACHINE.—W. M. Johnston, Wilmet, O. | |
| 115,868.—BENDING TIRES.—J. C. Jordan, Watertown, Wis. | |
| 115,869.—MOTOR.—Volney Kromer, Grand Rapids, Wis. | |
| 115,870.—BLAST.—G. H. Lagorce, Newcastle, Pa. | |

| | |
|---|--|
| 115,871.—TREATING HYDROCARBONS.—F. Lambe, London, Eng. | |
| 115,872.—SEWING MACHINES.—J. H. Lester, Brooklyn, N. Y. | |
| 115,873.—CARBURETING GAS.—C. B. Loveless, Syracuse, N. Y. | |
| 115,874.—FREADING DEVICE.—A. H. Maham, Hamden, N. Y. | |
| 115,875.—CULTIVATOR.—Philip Maier, Mapleton, Wis. | |
| 115,876.—POWER ENGINE.—R. M. Marchant, London, Eng. | |
| 115,878.—SLIDE VALVE.—I. Martin, D. B. Perrow, Lone Jack, Mo. | |
| 115,879.—REFRIGERATOR.—Peter McBride, New York city. | |
| 115,880.—BELTING.—Charles McBurney, Boston, Mass. | |
| 115,881.—CRANK, ETC.—R. B. McElrath, Newburgh, N. Y. | |
| 115,882.—NON-FREEZING HYDRANT.—H. Merrie, Cincinnati, O. | |
| 115,883.—GATE.—Gershom Mott, Big Run, O. | |
| 115,884.—ANIMAL POKE.—F. M. Moulton, Ferrisburg, Vt. | |
| 115,885.—KNIFE SCOURER.—D. S. Neal, Lynn, Mass. | |
| 115,886.—BOOK SUPPORT.—C. J. North, Auburn, N. Y. | |
| 115,887.—PAVEMENT.—W. B. Parisen, Newark, N. J. | |
| 115,888.—COAL SCUTTLE.—John Pfeifer, Philadelphia, Pa. | |
| 115,889.—NUT LOCK.—W. H. Phipps, Southborough, Mass. | |
| 115,890.—LAMP BURNER.—S. B. Platt, Derby, Conn. | |
| 115,891.—LANTERN.—Wm. Porter, Jr., New York city. | |
| 115,892.—CARTRIDGE.—T. J. Powers, New York city. | |
| 115,893.—RAISIN SEEDER.—Geo. Pratt, West Roxbury, Mass. | |
| 115,894.—HEAD PROTECTOR.—Helliwig Prévot, New York city. | |
| 115,895.—HOSE PIPE.—A. R. Reese, Phillipsburg, N. J. | |
| 115,896.—BOOK BINDING.—John L. Rile, New York city. | |
| 115,897.—SNAP HOOK.—Julius Robbins, Auburn, N. Y. | |
| 115,898.—MIRROR.—G. S. Roberts, Meredith Village, N. H. | |
| 115,899.—MOP.—T. F. Rooney, Chicago, Ill. | |
| 115,900.—ROLLER.—F. Roth, B. Furst, Lacon, Ill. | |
| 115,901.—WATER HEATER.—D. Smith, J. Lynch, Boston, Mass. | |
| 115,902.—DOOR FOR STOVES.—G. W. Smith, New York city. | |
| 115,903.—SAW MILL.—E. H. Stearns, Erie, Pa. | |
| 115,904.—VALVE GEAR.—C. A. Stewart, Aspinwall, Colombia. | |
| 115,905.—TRUNK.—Ninian Stewart, Detroit, Mich. | |
| 115,906.—STOVEPIPE JOINT.—Wm. Stine, Elmore, Ohio. | |
| 115,907.—PLOW.—J. T. Story, Magholla, Ark. | |
| 115,908.—HAME FASTENER.—Alvah Sweetland, Syracuse, N. Y. | |
| 115,909.—HORSE HAY RAKE.—M. W. Trescott, North Canaan, Ct. | |
| 115,910.—FLAX HARVESTER.—S. W. Tyler, Troy, N. Y. | |
| 115,911.—FIREARM.—S. F. Van Choate, Boston, Mass. | |
| 115,912.—ROOF.—C. G. Van Pappendarm, Charleston, Iowa. | |
| 115,913.—CARRIAGE AXLE.—E. F. Wagner, Houston, Texas. | |
| 115,914.—LUBRICATOR.—C. A. Wakefield, Pittsfield, Mass. | |
| 115,915.—WRITING INK.—E. F. Walsh, S. Duryea, Brooklyn, N. Y. | |
| 115,916.—FIREARM.—Franklin Wesson, Worcester, Mass. | |
| 115,917.—HOSE COUPLING.—Levi Wharton, Salem, Ohio. | |
| 115,918.—STEAM PUMP.—J. W. Whitaker, Kenosha, Wis. | |
| 115,920.—CARRIAGE.—John B. Wightman, Brooklyn, N. Y. | |
| 115,921.—FURNACE.—J. V. Woodhouse, Mine La Motte, Mo. | |
| 115,922.—PAPER CUTTER.—J. Worell, Philadelphia, Pa. | |
| 115,923.—STOVE WAITER.—C. D. Wright, Leesville, Conn. | |
| 115,924.—PAVEMENT.—A. G. Anderson, Hoboken, N. J. | |
| 115,925.—SEWING MACHINE.—G. W. Baker, Wilmington, Del. | |
| 115,926.—ELECTRO TINKING.—J. E. Bingham, Sheffield, Eng. | |
| 115,927.—SCREW CAP.—L. R. Boyd, New York city. | |
| 115,928.—STEAM ENGINE.—G. Bradford, Watertown, N. Y. | |
| 115,929.—PLANTER.—T. E. C. Brinly, Louisville, Ky. | |
| 115,930.—NOTATOR.—S. R. Crooks, St. Louis, Mo. | |
| 115,931.—PRESERVING WOOD.—S. P. Brown, Washington, D. C. | |
| 115,932.—SHINGLE MACHINE.—G. Challoner, Omro, Wis. | |
| 115,933.—ANIMAL TRAP.—W. F. Collier, Worcester, Mass. | |
| 115,934.—PRINTERS' RULES.—J. M. Conner, Brooklyn, N. Y. | |
| 115,935.—SIGNAL.—M. J. Coston, Washington, D. C. | |
| 115,936.—SIGNAL.—A. W. Cram, St. Louis, Mo. | |
| 115,937.—WATER METER.—J. W. Cremin, New York city. | |
| 115,938.—LOOM.—J. S. Davies, W. E. Yates, Manchester, Eng. | |
| 115,939.—CORN SHELLER.—L. Day, Baltimore, Md. | |
| 115,940.—WATER METER.—A. M. de Souchet, Evansville, Ind. | |
| 115,941.—BEEHIVE.—J. Detrick, W. B. Niven, Bellefontaine, O. | |
| 115,942.—LIFTING APPARATUS.—C. H. Douglas, Hartford, Ct. | |
| 115,943.—SHEET METAL CAN.—J. G. Evenden, Chicago, Ill. | |
| 115,944.—APPLYING REMEDIES.—J. Fanyon, Bridgeport, Ct. | |
| 115,945.—GAGE.—Henry Fellows, Bloomington, Ind. | |
| 115,946.—PRESERVING WOOD.—J. W. Fielder, Princeton, N. J. | |
| 115,947.—PREPARING GRAIN.—R. B. Fitts, Philadelphia, Pa. | |
| 115,948.—BEDSTEAD.—F. G. Ford, Washington, D. C. | |
| 115,949.—CUTTING BELTS.—J. C. Foster, New London, Conn. | |
| 115,950.—SPARKLING WINES.—G. W. Gilham, Richmond, Va. | |
| 115,951.—DENTAL PLATES.—J. P. Gillespie, San Francisco, Cal. | |
| 115,952.—ENGINE.—John Goulding, Worcester, Mass. | |
| 115,953.—LAMP BURNER.—Wm. H. Gray, St. Louis, Mo., and S. Ross, Washington, D. C. | |
| 115,954.—CORSET.—T. F. Hamilton, New Haven, Conn. | |
| 115,955.—LAMP.—H. W. Hayden, Watertown, Conn. | |
| 115,956.—HOT AIR FURNACE.—S. E. Hewes, Albany, N. Y. | |
| 115,957.—STOVE.—S. E. Hewes, Albany, N. Y. | |
| 115,958.—STOVE.—S. E. Hewes, Albany, N. Y. | |
| 115,959.—BASE BURNING STOVE.—S. E. Hewes, Albany, N. Y. | |
| 115,960.—WOOD PAVEMENT.—L. Hill, Alexandria, Va. | |
| 115,961.—CHIMNEY.—Seth Hopkins, Napoleon, Ohio. | |
| 115,962.—TOY RING.—Wm. Hutchings, Newark, N. J. | |
| 115,963.—ENGINE.—J. S. Johnstone, Ayr, North Britain. | |
| 115,964.—CAR COUPLING.—T. Lanston, Washington, D. C. | |
| 115,965.—FASTENER.—John S. Lash, Philadelphia, Pa. | |
| 115,966.—SWITCH.—G. Little, Rutherford Park, N. J. | |
| 115,967.—RELAY.—G. Little, Rutherford Park, N. J. | |
| 115,968.—CIRCUIT CLOSER.—G. Little, Rutherford Park, N. J. | |
| 115,969.—TELEGRAPH PAPER.—G. Little, Rutherford Park, N. J. | |
| 115,970.—TELEGRAPHIC CIRCUITS.—G. Little, Rutherford Park, N. J. | |
| 115,971.—SASH HOLDER.—Z. Lockwood, Saratoga Springs, N. Y. | |
| 115,972.—REEPING SAILS.—John J. Mason, Girdle tree, Md. | |

| | |
|--|--|
| 115,973.—MOLDER'S FLASK.—A. Merriman, Plantsville, Conn. | |
| 115,974.—CROZING MACHINE.—W. R. Middleton, Cleveland, O. | |
| 115,975.—FELLING TREES.—E. R. Morrison, New York city. | |
| 115,976.—DIE.—F. B. Morse, Plantsville, Conn. | |
| 115,977.—CUT-OFF.—H. Myers, Jr., McLean, Ill. | |
| 115,978.—HARVESTER.—R. L. Nelson, Orange Court House, Va. | |
| 115,979.—CHAIR IRON.—Henry Ocorr, Sheboygan, Wis. | |
| 115,980.—GANG PLOW.—William Parrish, Dayton, Oregon. | |
| 115,981.—WHEEL.—J. C. Pierce, Bridgeport, Ill. | |
| 115,982.—VALVE.—John Porteous, Cincinnati, Ohio. | |
| 115,983.—KNITTING MACHINE.—H. Padder, Dayton, Ky., T. W. Hubert, Cincinnati, Ohio. | |
| 115,984.—BROILER.—D. E. Roe, Elmira, N. Y. | |
| 115,985.—BUCKLE.—F. A. Ross, S. De La Mater, Terre Haute, Ind. | |
| 115,986.—DRAW HEAD.—Daniel Shaaber, Reading, Pa. | |
| 115,987.—MEAT CUTTER.—F. G. Slemers, Winona, Minn. | |
| 115,988.—CARBURETER.—Byron Sloper, St. Louis, Mo. | |
| 115,989.—HAND STAMP.—Joseph Sloper, London, England. | |
| 115,990.—ASH SIFTER.—W. T. Stoutenborough, Brooklyn, N. Y. | |
| 115,991.—BUDDER.—L. P. Thurston, Rockport, Mass. | |
| 115,992.—CAST STEEL.—Thomas Trafford, Dublin, Md. | |
| 115,993.—BOILER.—S. Tucker, J. R. Brownell, Dayton, Ohio. | |
| 115,994.—CHANDELIER MACHINE.—H. S. Vrooman, Boston, Ms. | |
| 115,995.—SHEARS.—W. A. Waller, I. Harbaugh, West Salem, O. | |
| 115,996.—GUN LOCK.—G. B. Warren, Prospect, Pa. | |
| 115,997.—FIREARM.—Eli Whitney, New Haven, Conn. | |
| 115,998.—EXCAVATOR.—E. H. Williams, Clermont, Iowa. | |
| 115,999.—FARE BOX.—J. F. Winchell, Springfield, Ohio. | |
| 116,000.—HAY FORK.—Cyrus Yengst, Annville, Pa. | |
| 116,001.—LIGATURE, ETC.—S. P. Gilbert, Racine, Wis. | |

REISSUES.

- 4,419.—TAPE MEASURE.—L. P. Bradley, New Haven, Conn.—Patent No. 92,573, dated July 13, 1869.
- 4,420.—HARVESTER.—J. Butter, Buffalo, N. Y.—Patent No. 26,064, dated Feb. 7, 1860.
- 4,421.—STOVE.—A. C. Corse, Troy, N. Y.—Patent No. 107,597, dated Sept. 30, 1870.
- 4,422.—BOOT.—C. S. Dunbrack, Swampscott, Mass.—Patent No. 25,210, dated Sept. 25, 1869.
- 4,423.—HORSE POWER.—M. B. Erskine, Racine, Wis.—Patent No. 107,337, dated Sept. 13, 1870.
- 4,424.—DIAPER.—J. C. Hempel, Baltimore, Md.—Patent No. 91,834, dated June 15, 1869.
- 4,425.—STOCK CAR.—Amos Rank, Salem, Ohio.—Patent No. 111,972, dated Feb. 14, 1871.
- 4,426.—STOVE.—A. White, Rock Island, Ill.—Patent No. 101,688, dated April 5, 1870.

